

2002 ARM Program Science Team Meeting
St. Petersburg, FL
April 8-12, 2002

The International Intercomparison of 3-dimensional Radiation Codes

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I3RC (International Intercomparison of 3-dimensional Radiation Codes) has as its primary goal to compare a wide variety of three-dimensional (3D) radiative transfer methods applied to Earth's atmosphere, with a few selected cloud fields as input, and a few selected radiative quantities as output. Phases 1 and 2 are now complete, and participants represented institutions in Canada, France, Germany, Russia, the United Kingdom, and the USA, who met for two workshops in Tucson, Arizona USA, and compared results from 5 cloud fields of varying complexity, beginning with simplified atmosphere and surface, and proceeding to more realistic cases. Phase 3 is now underway, focusing on improvement and sharing of 3D radiation code, aided by working groups on "Approximations" and "Open Source". The "Approximations" group has so far focused on diffusive approximate methods in an attempt to gain advantages in execution time, and also to advance the understanding of 3D radiation processes. The "Open Source" subgroup is developing a Monte Carlo radiative transfer toolkit that makes state-of-the-art techniques available to a wide range of users. Activities of both subgroups are further explained at the I3RC website <http://i3rc.gsfc.nasa.gov>. Participants in I3RC are forming a 3D Working Group under the auspices of the International Radiation Commission, and will meet for this and related activities at a workshop in Tucson in November 2002.